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SOME ASPECTS OF PROGENY TESTING SOUTHDOWN RAMS

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## Chapter 1

### INTRODUCTION

Recent changes that have taken place in the preparation and presentation of New Zealand lamb for marketing have been discussed by Barton (1964). Probably the most important of these changes is the increasing amount of lamb that is being displayed and sold as cuts. This is to some extent, the result of, and has definitely contributed to, the growing interest shown by the consumer in meat quality over the last decade. Such interest has been further amplified by increases in the general standard of living of people in many countries, and by the growing consumer aversion to animal fats. Indications of consumer preferences in any particular area may be obtained by surveys, and although these have been carried out extensively for beef, not many have been made concerning lamb. An example however, is that conducted by Marsh (1960), who, by sending questionnaires to members of the middle and working classes of Leeds, showed that the leg was the most popular cut, and that the most favoured quality characteristics in order of popularity were: economy in price and use, leanness, and absence of bone. Results such as these give an indication of the consumers' concept of meat quality, and it is the function of a grading system to integrate this concept with the aims of the lamb producer (Kiehl, 1957; Brayshaw and DeLoach, 1963). These aims will basically be to maximize his profit per unit time, and in order to do this he must produce the greatest possible weight of top grade carcasses in the shortest possible time. Grading of lamb in New Zealand which is carried out subjectively on the whole carcass, is based mainly on conformation and fat cover (Smith-Pilling, 1959), and it has been shown that the carcasses of the top grade contain more fat and less meat

or bone, than those of the lowest grade (Barton, 1960).

If, as it seems, present grading standards are not a true reflection of consumer preferences, then they can offer no real guidance or incentive to farmers who are interested in planning their management and breeding policies, so as to produce the type of lamb that the consumer wants, and for which he is prepared to pay the highest price. For the same reason there would be no real incentive to improve carcass quality through progeny testing. However, considerable interest has been shown in the grading of meat in recent years, both overseas (e.g., Brayshaw and DeLoach, 1963) and in New Zealand, where the Meat Export Grades Investigation Committee of the New Zealand Meat Producers Board is currently investigating the situation. It is assumed (in order to justify the conducting of the experiment reported herein) that the findings of the above Committee will eventually result in consumer preferences being represented more effectively in lamb grading criteria; thereby providing the producer to some extent with the required guidance and incentives.

It has been shown (Morley, 1952) that greater genetic gains can be made through the selection of rams than ewes, and in the case of carcass quality characteristics, where killing of the animal is often necessary for measurement, progeny testing of rams is the obvious selection aid to use.

The preceding comments give an indication of the background for this experiment, which consists basically of a study of some aspects of the progeny testing of sires of export lambs. Southdown rams were crossed with Romney Marsh ewes to produce Southdown-Romney cross lambs which, numerically, are the most important of New Zealand's export lambs. Stevens (1963) gives a general account of the history and development of the New Zealand export lamb industry, with particular emphasis on the

Southdown breed.

Objectives of this study may be summarized as follows:-

- (1) Measurement of certain carcass quality characteristics of Southdown-Romney cross lambs, and analysis of the data obtained in order to detect sire differences. Characteristics measured can be classified as:-
  - (a) Growth rates.
  - (b) Carcass chemical composition.
  - (c) Carcass measurements and weights of non-carcass components.
  - (d) Tenderness of the cooked meat.
- (2) Investigation of the repeatability of sire performance between seasons, with regard to the above characteristics.
- (3) Investigation of the repeatability of sire performance when its progeny are selected for slaughter in different ways.
- (4) Investigation of the use of sample cuts, and multiple regression prediction equations, to estimate carcass composition.